

# Work Order ID 56221

February 16, 2010 1:24:49 PM



Page 1

Item ID: D212-664-101

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd

Start Date: 2/16/10 Start Qty: 1.00

Required Date: 3/02/10 Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference:

Run Start



Approvals:

Process Plan:

*PL*

Date: *10-2-16*

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D212-664-141

Rev D

0.00

100



DC

Document Control

DOCUMENT CONTROL

Memo

Photocopy bluefile and create labels as per PPP D212-664-101 CHG003

0.00

*8/10/16*

*10/03/18*

110



Packaging

Packaging

Pick Kit

Packaging

Memo

0.00

0.00

*(1X)*

*2*

*MB 10-03-01*

120



CNC Bend 2

CNC Alpha 160 Bender

BENDING MACHINE - CROSSTUBES

Memo

Bend tube as per Dwg D212-664-141 using CNC bender program 212-fw and Folio FT015

0.00

0.00

*(1X)*

*1*

*MB 10-03-01*

*1 B 56221*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



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Required Date: 3/02/10 Req'd Qty: 1.00

Reference:

Accept

Setup Start

Stop



Cust Item ID:

Customer:

Run Start

Stop

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130  QC Quality Control	QC15- Crosstube Dimensional Check  Memo	0.00 0.00		8 10/03/02		(X)			
140  Crosstubes Crosstubes	Crosstubes  Memo 1-Drill pilot holes in tube as per Dwg D212-664-141 using drill Jig DT8548 & DT8549  2-Ream hole to finish size in tube as per Dwg D212-664-141 using drill Jig DT8548 & DT8549. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes.  3-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-141  4-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-141	0.00 0.00							

MB/AWM  
10-03-02MB  
10-03-03



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Cust Item ID:

Required Date: 3/02/10 Req'd Qty: 1.00

Customer:

Reference:

Run Start



Stop



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

150



HandFXtube

Crosstubes Chemical Conversion

0.00

Memo

0.00

Hand Finishing Crosstubes

Chemical Conversion Coat within 24 hours of bending and drilling

1 - AWM 10-3-11

160



QC

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Quality Control

8 w/m/11

⑩

170



Outsource2

Outsource process - NDT per QSI038 4.1

0.00

Memo

0.00

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 038  
Issue P/O: 11499  
LPI as per ASTM 1417 Level 2  
Attach copy of NDT results to work order

CZ 10/3/11 ⑩





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Cust Item ID:

Required Date: 3/02/10 Req'd Qty: 1.00

Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

180



Packaging

Receive & Inspect for Damage & Mat'l Certs  
Packaging

0.00

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

CY 10/3/11 (1)

190



QC

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Quality Control

Inspect for damage &amp; ensure results are as per Dwg D212-664-141

S 10/03/12

(1)





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Accept



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Stop



Item Name: Crosstube Fwd

Start Date: 2/16/10 Start Qty: 1.00



Cust Item ID:

Required Date: 3/02/10 Req'd Qty: 1.00

Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

200



SprayPaint

Spray Painting

Spray Painting per QSI005 4.2  
SprayPaint

0.00

Memo

0.00

1-Prime inside and outside crosstube as per QSI 005 4.2  
2-Paint outside crosstube with White Imron as per QSI 005 4.2

PRIME:

Start Time: 10 00

Finish Time: 11 00

PAINT:

Start Time: 3 00

Finish Time: 4 00

ZT 10-07-16

210



QC

Quality Control

QC14- Inspect Spray Paint

0.00

Memo

0.00

Then, Wrap in plastic bag to protect from scratches

m/ 10 03 17 ①



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Required Date: 3/02/10 Req'd Qty: 1.00

Reference:

Accept



Setup Start



Stop



Cust Item ID:

Customer:



Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start



Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

220



Crosstubes

Crosstubes

0.00

Memo

0.00

1- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe

2-Install supports with magnobond as per QSI 015 Adhere for 12 Hrs

A/R 6398 Magnobond Batch: 112417 exp: 01/2011

Torque: mL 10/03/18 ①

mL

10

03

17 ①

230



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

8/10/18

⑩

240



Packaging

Packaging

Pick Kit

0.00

Memo

0.00

P. 10/3/18 ⑩





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Reference:

Accept



Setup Start



Stop



Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

250

QC4- 100% Inspect kits for completeness

0.00



QC

Quality Control

Memo

0.00

8.06/18

70

260



Packaging

Packaging

Packaging

Memo

0.00

0.00

FG103

Rev E

10-3-18 SP

270



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

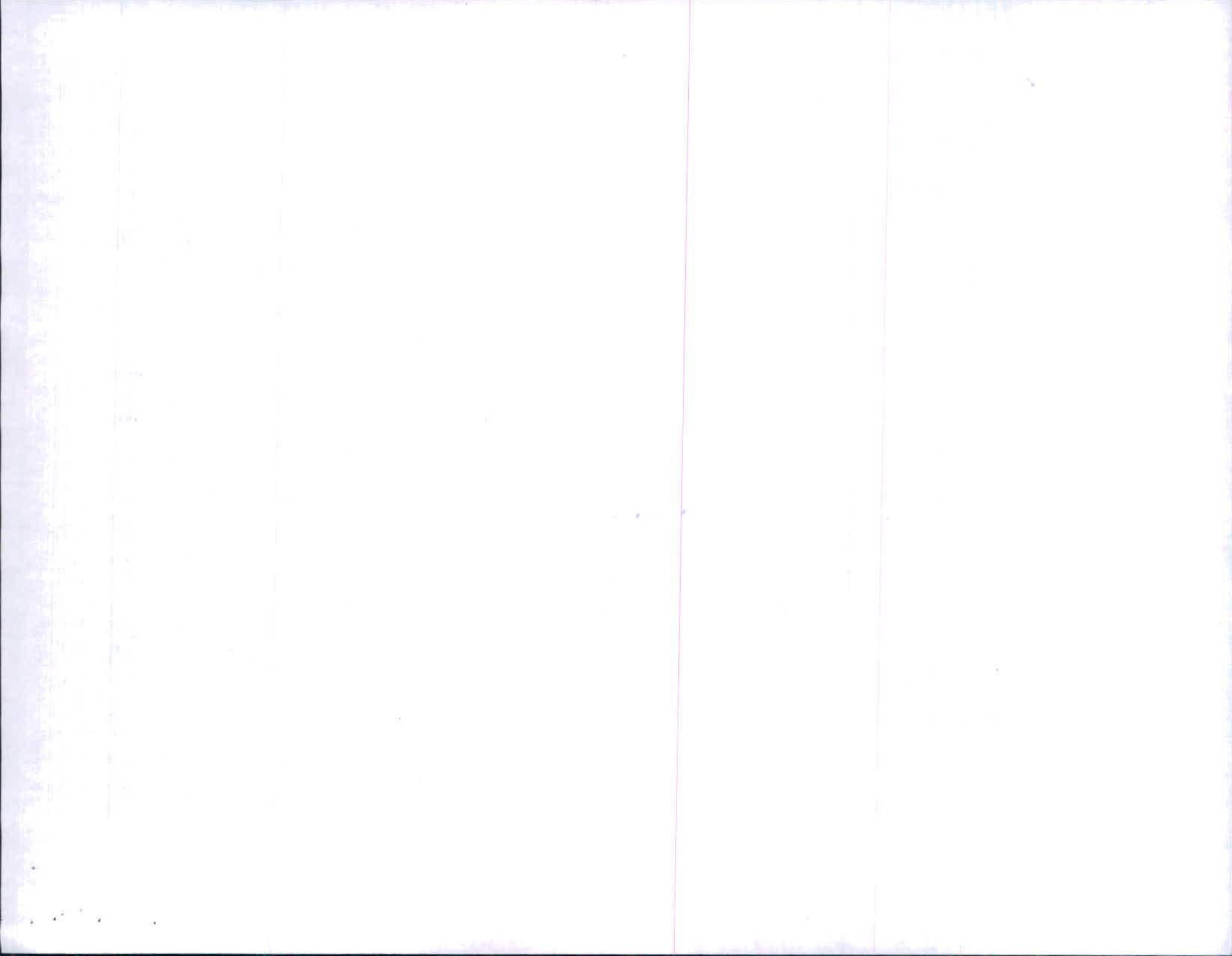
0.00

Identify and pack for shipping as per PPP D212-664-101

10/03/24

MF

10-3-18



# Picklist Print

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Page 1

Work Order ID: 56221

Parent Item: D212-664-101

Parent Item Name: Crosstube Fwd

Comments: IPP Rev:E 04.02.16 Reformat KJ/DS  
 IPP Rev:F 06-03-29 Remove Coments on Pick List JLM  
 IPP Rev:G 07-04-30 As per Rev C JLM

Start Date: 2/16/10

Required Date: 3/02/10

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ D212-664-101TRN	Replacement	Mfg/ Manufactured	Bin No	Primary	Last	Route 110	Unit of Each	Qty on 3.0000	Remaining 1.0000	Qty	Date	Status
Crosstube Turning Detail											MB 10-03-01	✓

D3595-063-450

Manufactured

No



RUBBER CUSHION

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
FG	3	
54284	1	
54501	1	
55630	1	

230 Each 123.6966 4.2105

MB 10-03-01

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
LG	18.72767369	
52447	18.7276737	
Main Warehouse		
ST	104.9689	
38959	2	
43210	2.59	
46465	0.3789	
53775	100	

ml 10 03 17





# Picklist Print

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Work Order ID: 56221

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Comments: IPP Rev:E 04.02.16 Reformat KJ/DS  
 IPP Rev:F 06-03-29 Remove Coments on Pick List JLM  
 IPP Rev:G 07-04-30 As per Rev C JLM

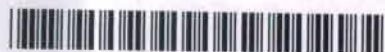
Start Date: 2/16/10

Required Date: 3/02/10

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/	Replacement	Mfg/	Bin	Primary	Last	Route	Unit of	Qty on	Remaining	Qty	Date	Status
MS21920-25		Purchased	No			220	Each	184.0000	4.0000			



Clamp(per MIL-DTL-8783C)



Warehouse	Loc Qty	Loc Code
<u>Location</u>		
Main Warehouse		
CA	25	
113744	25	
Main Warehouse		
ST	159	
107456	2	
108111	3	
108975	17	
109181	42	
109644	10	
111282	4	
111429	1	
112495	1	
112919	4	
113281	25	
113282	50	

ml 10 03 17

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Shop Packet Print

Page 2



# Picklist Print

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Work Order ID: 56221

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Comments: IPP Rev:E 04.02.16 Reformat KJ/DS  
 IPP Rev:F 06-03-29 Remove Coments on Pick List JLM  
 IPP Rev:G 07-04-30 As per Rev C JLM

Start Date: 2/16/10

Required Date: 3/02/10

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ D2893-1	Replacement	Mfg/ Manufactured	Bin No	Primary	Last	Route 220	Unit of Each	Qty on 54.0000	Remaining 2.0000	Qty	Date	Status
-------------------------------	-------------	----------------------	-----------	---------	------	--------------	-----------------	-------------------	---------------------	-----	------	--------



2.75 Support

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
ST	54	
25657	6	
47109	2	
51775	17	
53125	19	
53340	10	

ml 10 03 17

D3428-1



Placard

Manufactured No

240 Each 21.0000 1.0000



Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
ST096	21	
50790	1	
55565	20	

55565

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Comments: IPP Rev:E 04.02.16 Reformat KJ/DS  
 IPP Rev:F 06-03-29 Remove Coments on Pick List JLM  
 IPP Rev:G 07-04-30 As per Rev C JLM

Start Date: 2/16/10

Required Date: 3/02/10

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/	Replacement	Mfg/	Bin	Primary	Last	Route	Unit of	Qty on	Remaining	Qty	Date	Status
AN6-35A		Purchased	No			240	Each	64.0000	4.0000			



BOLT

Warehouse	Location	Loc Qty	Loc Code
Main Warehouse	ST	64	
	112314	14	
	112805	20	
	113422	30	

M/12314 24  
 M/12805 20

AN6-36A



Bolt

Purchased

No

240

Each

95.0000

4.0000

Warehouse	Location	Loc Qty	Loc Code
Main Warehouse	ST	95	
	109632	1	
	110382	2	
	112314	42	
	113121	50	

M/12314

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Comments: IPP Rev:E 04.02.16 Reformat KJ/DS  
 IPP Rev:F 06-03-29 Remove Coments on Pick List JLM  
 IPP Rev:G 07-04-30 As per Rev C JLM

Start Date: 2/16/10

Required Date: 3/02/10

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/	Replacement	Mfg/	Bin	Primary	Last	Route	Unit of	Qty on	Remaining	Qty	Date	Status
MS21042L6		Purchased	No			240	Each	388.0000	6.0000			
												
Nut												

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	388	
105077	22	
110002	5	
111578	361	

AN960JD616



Washer

Purchased

No

240 Each

433.0000 18.0000



Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
ST	433	
112314	3	
112828	130	
113149	300	

111578

2/13/10

1113149

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Shop Packet Print

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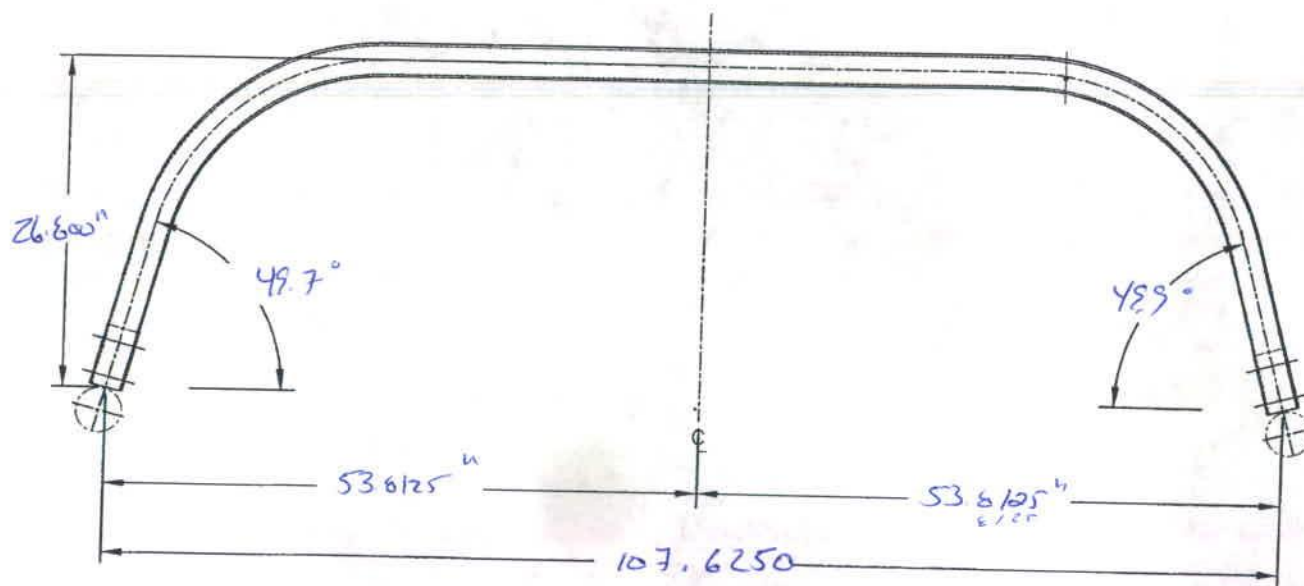




<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 56221
<b>Description:</b> Crosstube High Fwd (205/212/412)		<b>Part Number:</b> D212-664-101
<b>Inspection Dwg:</b> D212-664-141	<b>Rev:</b> C	<b>Page 1 of 1</b>

*Need sign off*

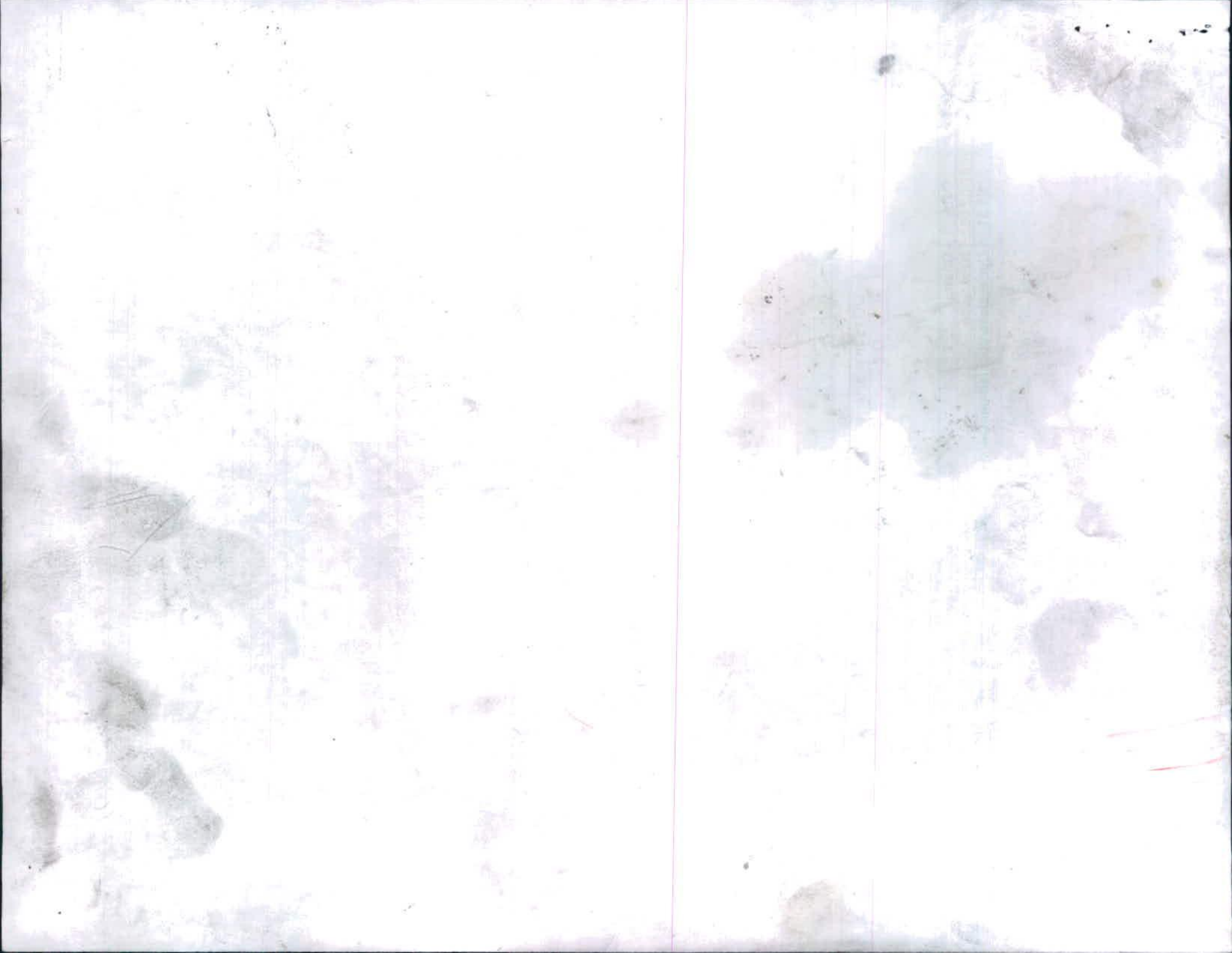
Required Dimension	Min	Max
Height	26.79	27.05
1/2 Span	53.59	53.85
Angle	49	52
Total Span	107.18	107.7



Comments

QC15 Inspection	8
Date	10/03/02

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	07.05.31	Dimensions updated per Dwg Rev C	KJ/JM	





Item	Qty -141	Qty -141B	Part Number	Description
1	X		D212-664-141	CROSSTUBE ASSEMBLY (205/212/412 HIGH FWD)
2		X	D212-664-141B	CROSSTUBE ASSEMBLY (214 HIGH FWD)
3	1	1	D6005-128	CROSSTUBE
4	2	2	D2893-1	SUPPORT
5	4	4	D3595-063-450	RUBBER CUSHION
6	4	4	MS21920-25	CLAMP (OR MS21920-26)
7	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

#### GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6005-128  
FINISHED LENGTH = 126.514±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF  
USING VIBRATING STYLUS
- 7) WEIGHT: D212-664-141 = 33.6 lbs (PER IIN-D212-664)  
D212-664-141B = 33.6 lbs (PER IIN-D212-664)
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS  
6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2893-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF  
D2893-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER  
INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-25 CLAMPS (OR -26) WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE D2893-1  
SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE  
SUPPORT.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE  
SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR  
DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND  
MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT  
HAS NOT BOTTOMED-OUT AFTER TORQUING.

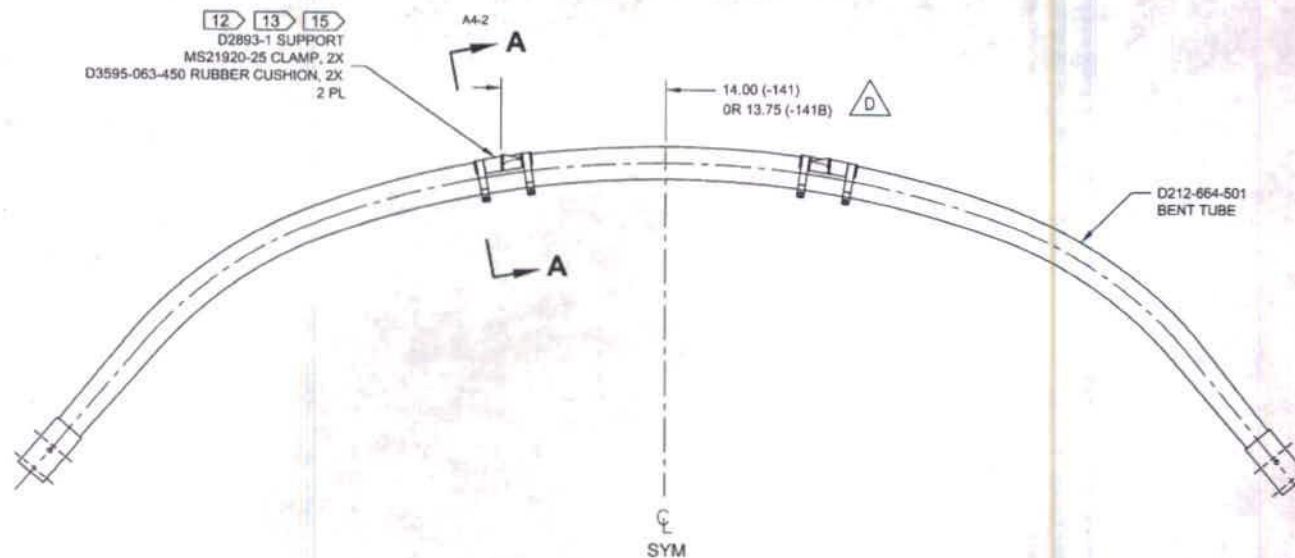
SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 36221  
B/J 10-2-12

RELEASED  
2009-10-29  
NA

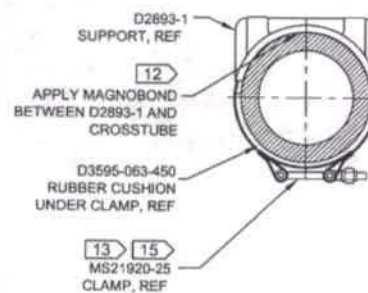
D	REFORMAT/REVISE GENERAL NOTES/PART LIST; REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -141B (ZN B4-2, D4-2); REMOVED REF & ADD TOLERANCES (ZN B4-3, C6-3, C8-3 & B6-3); RELOCATED FLAG #6 PER PAR 08-046 (ZN A5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4	RF	09.09.30
C	REMOVE -851 ABRASION STRIP; ADD MAGNOBOND 6398, CUSHION, REVERSE CLAMPS	PH	07.03.08
B	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	PH	05.02.04
A	NEW ISSUE	PH	00.12.12
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	PH	DRAWING NO.	REV. D
MFG. APPR.	PH	D212-664-141	SHEET 1 OF 4
APPROVED	PH	TITLE	SCALE
DE APPR.	PH	XTUBE ASSY (205/212/412 HI FWD)	NTS
DATE	09.09.30	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	







**D212-664-141/-141B**  
**ASSEMBLY DETAIL**



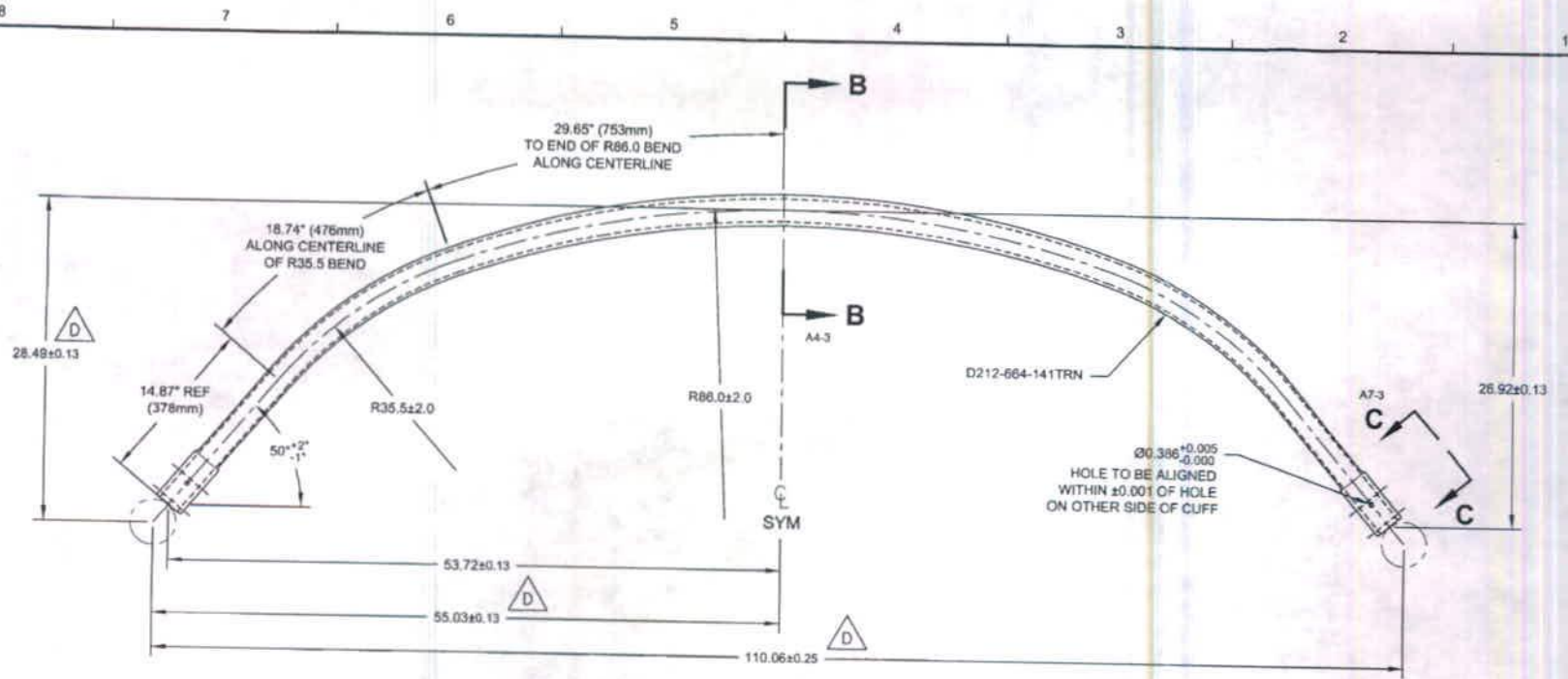
**SECTION A-A** D5-2  
SCALE 4X

DESIGN	PH	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	QD	DRAWING NO.	REV. D
MFG. APPR.	DS	D212-664-141	SHEET 2 OF 4
APPROVED	10	TITLE	SCALE
DE APPR.	11	XTUBE ASS'Y (205/212/412 HI FWD)	NTS
DATE	09.09.30	COPYRIGHT © 2000 BY DART AEROSPACE LTD	
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**RELEASED**  
2009-10-29

w/o 56221

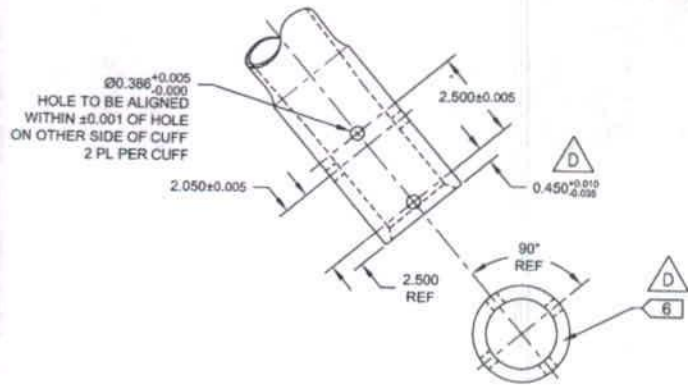




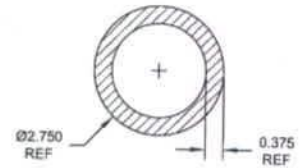
**D212-664-501**  
**BENDING AND DRILLING DETAIL** 10 D

*w/036221*

**RELEASED**  
 2009-10-29



**VIEW C-C: CUFF DETAIL**  
 SCALE 3X C2-3

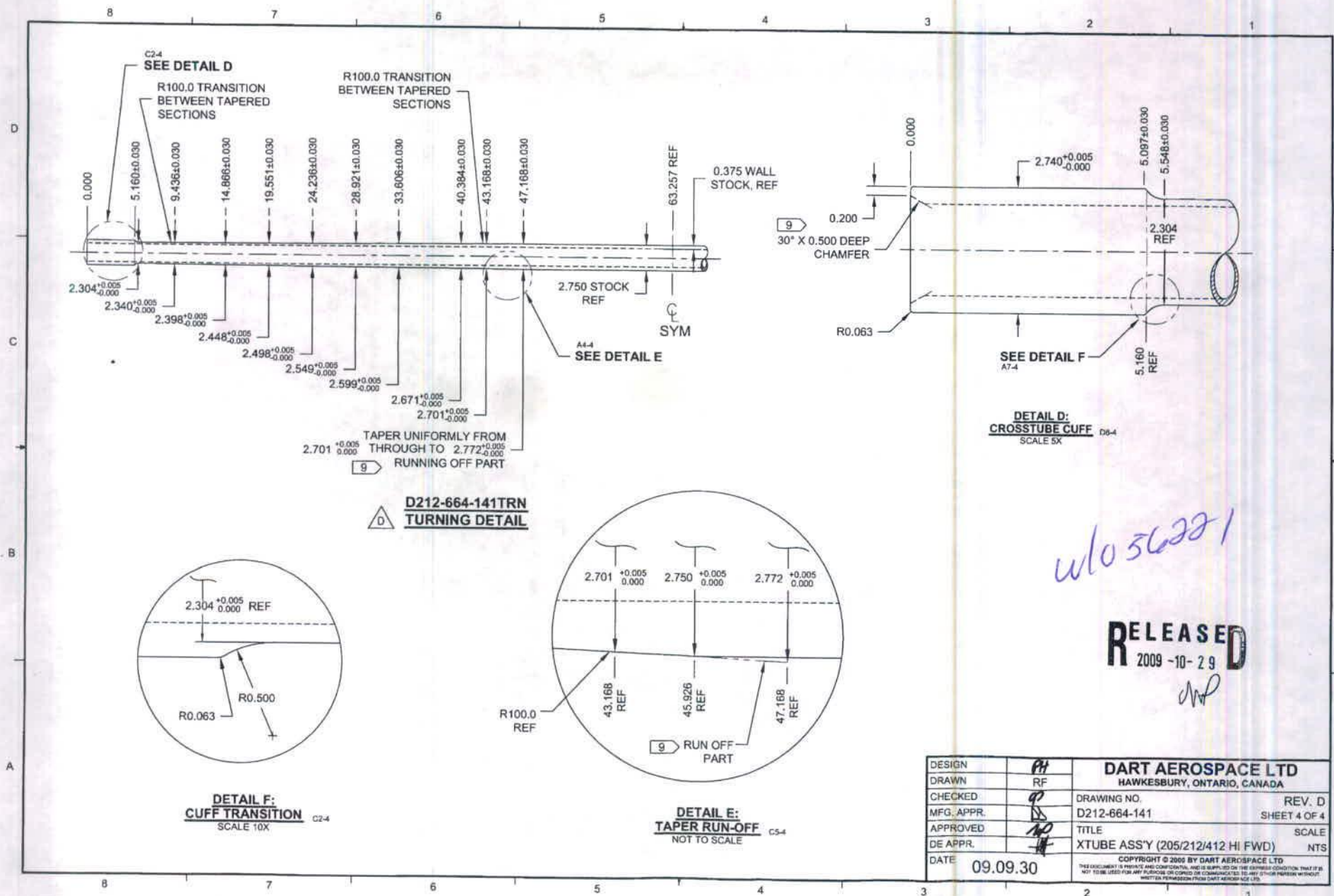


**SECTION B-B**  
 SCALE 4X C4-3

DESIGN	PH	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	Q	DRAWING NO.	REV. D
MFG. APPR.	NS	D212-664-141	SHEET 3 OF 4
APPROVED	AP	TITLE	SCALE
DE APPR.	HT	XTUBE ASS'Y (205/212/412 HI FWD)	NTS
DATE	09.09.30	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR FOR ANY REASON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	













## LIQUID PENETRANT TEST REPORT

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PAGE 1 OF 1

CLIENT DART Aero Space DATE MARCH 11-2010 TIME AM ☒ PM ☐  
ATTENTION LINDA/CHANTEL ACUREN JOB NO. 198-10-0708  
ADDRESS 1270 ABELDEN ST. PO/VO No. 11499  
HAWKESBURY ON KENN 1K7 WORK LOCATION SHOP  
ACCEPTANCE STD. ASTM 1417 REV./DATE 2007  
PROJECT F.P.I. ON CROSS TUBES  
ITEM(S) EXAMINED FOUR CROSS TUBES

JOB DESCRIPTION STAINLESS STEEL PROCEDURE No. LT-002 REV./DATE 2007 TECHNIQUE No. LT-TLH2 REV./DATE 2007  
PART NO. 5 MATERIAL ALUMINE ALUMINUM THICKNESS —  
SCOPE DET FLUORESCENT LIQUID PENETRANT INSPECTION  
CARRIED OUT 100% EXTERNAL

TEST DETAILS  
METHOD ☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED  
FAMILY BRAND MAGNAFLUX BLACK LIGHT S/N 16451 ☐ OUTPUT > 1000  $\mu$ W/cm<sup>2</sup> ☐ AMBIENT < 2 fc  
PENETRANT 2 LG7 MINIMUM DWELL TIME 45 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE  
PENETRANT REMOVER H2O MINIMUM DRY TIME >10 MIN. OTHER LABINO  
DEVELOPER SKD 52 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N 1048866 CAL DUE DATE MAY 7-2010  
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY

TEST SURFACE  
SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☒ MACHINED ☐ SHOT BLASTED ☐ CLEAN BARE METAL  
SURFACE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/50°F ☒ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- ( ☐ METRIC ☐ IMPERIAL )

1 CROSS TUBE W.O. 56220 ✓  
1 CROSS TUBE W.O. 56221 ✓  
1 CROSS TUBE W.O. 55919 ✓  
1 CROSS TUBE W.O. 55920 ✓  
5 SLEEVE'S W.O. 56335 ✓  
2 MOUNT'S W.O. 56462 ✓

8/10/12

10/03/15

Scope of Services  
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care  
In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

## SIGNATURES

CLIENT REPRESENTATIVE Jan Titley PRINT SIGNATURE [Signature] DTR# E-03352  
TECHNICIAN (SIGNATURE): [Signature] REPORT REVIEWED BY: NAME INITIALS  
NAME (PRINT): Mike Johnston 1<sup>st</sup> TECHNICIAN 2<sup>nd</sup> TECHNICIAN  
CGSB LEVEL # SNT LEVEL — CGSB LEVEL — SNT LEVEL —  
CGSB REG. NO. 6606 CGSB REG. NO. —

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PT-Sept 2005

